



Report to the
Board of County Commissioners

**Implementing Goal 105
and the Carrying Capacity Study:**

THE TIER SYSTEM



Tier I Conservation, Restoration, Protection

Tier II Transition, Reduce sprawl

Tier III Redevelopment, Infill development

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Planning and Environmental
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1.0 Purpose

The purpose of this report is as follows:

- To provide the Monroe County Board of County Commissioners and the public with the proposed Tier Maps developed by staff to guide future development and land acquisition.
- To explain how the Tier System, including the Tier Maps, implement Goal 105 “Smart Growth” of the Comprehensive Plan.
- To review the requirements of the Florida Administrative Commission Rule number 28-20.100 – 2010 Comprehensive Plan “Work Program”.
- To provide additional understanding of the results of the Carrying Capacity Study and how the Tier System is the framework for it’s implementation by the County.

2.0 Background

The Florida Keys consists of a 112-mile long chain of islands located at the southern tip of Florida. U.S. Highway 1, stretching from Key Largo to Key West, connects the more developed islands. The biological communities in the Florida Keys have evolved in response to unique island environmental conditions characterized by salt water, subtropical savanna-type climate- hot humid summers and cool dry winters, limestone substrate and hurricanes. These conditions combined with the isolation of the islands have supported colonization and evolution of highly specialized plants and animals, many endemic to the Florida Keys. The upland habitats, hammock and pine lands include over 30 of these endemic species. In addition, a significant portion of the waters adjacent to the islands has been designated as Outstanding Florida Waters, and includes the Florida Keys National Marine Sanctuary.

Approximately 15% of the land area in the Florida Keys is developed, and between 60% and 70% of the undeveloped land area is in public ownership (Florida Keys Carrying Capacity Study, September 2002.) This leaves between 15% and 20% of the land area vacant and in private ownership. This report and the Tier Maps are primarily concerned with this remaining undeveloped privately owned lands and determining, based on the environmental quality and development characteristics, whether they should be designated for acquisition for habitat protection or sprawl reduction, or designated for infill and redevelopment.

2.1 Florida Administration Commission Rule 28-20.100 – Work Program

The 2010 Comprehensive Plan took seven years to be fully in effect, mired in three to four years of legal challenges after it was adopted in April 1993. The ongoing legal proceedings prompted a 1995 Final Order and Recommendations by a Hearing Officer, which found that the proposed Plan was not in compliance and specified remedial action. The findings stated among other things that near shore waters, shoreline sea grasses and Key Deer habitat had reached or exceeded the carrying capacity.



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As a result of this order, the Florida Administration Commission in 1996 enacted Rule 28-20.100, which created the Work Program in the 2010 Comprehensive Plan. The Work Program required among other things, the preparation of a carrying capacity study for the Florida Keys. The goal of the Florida Keys Carrying Capacity Study (FKCCS), excerpted from Rule 28-20.100 reads as follows:

“The carrying capacity analysis shall be designed to determine the ability of the Florida Keys ecosystem and the various segments thereof, to withstand all impacts of additional land development activities.”

Year Six of the Work Program (July 13, 2002 – July 13, 2003) enacted in Rule 28-20.100, as amended, directs the county to implement the Carrying Capacity Study by adopting amendments to the rate of growth ordinance, the LDRs, the future land use maps and maximum permitted densities. The Rule amendment in 2002 added two additional tasks to the work program:

- 1) A master land acquisition plan is required containing a strategy for securing funding and the acquisition of properties that should be preserved due to their habitat and also land for affordable housing; and
- 2) Adoption of land development regulations, and/or comprehensive plan amendments that strengthens the protection of terrestrial habitat through the Permit Allocation System and permitting processes, and the preservation and maintenance of affordable housing stock.

2.2 Carrying Capacity Study

The DCA and the U.S. Army Corps of Engineers jointly sponsored the Carrying Capacity Study. A series of technical workshops were held during 1999 to refine the scope of the study and address uncertainties regarding available information and modeling capabilities. The contractor, URS, Inc., began working on the project in late 1999 and completed the study in September 2002. The draft of the model and study was critically peer reviewed in early 2002.

The National Science Foundation review document stated, that over-all the current peer reviewed scientific information proved insufficient to develop a comprehensive carrying capacity framework that would allow for undisputable determinations of whether future development scenarios fall within the carrying capacity of the Florida Keys. The final report was also peer reviewed and the scientists and technical reviewers agree that the *terrestrial portion* of the study provides a valuable analysis and the Impact Assessment Model is a useful tool, but with substantial limitations. The marine ecosystems and species portion of the study was removed from the model because existing data is insufficient to establish quantitative, predictive relationships between land use or development and marine environment.



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Chapter 5 of the FKCCS (Attachment C) summarizes the results of the study:

The evaluation of the terrestrial ecosystem demonstrated that land development in the Florida Keys has surpassed the capacity of upland habitats to withstand further development.” The study states that fragmentation of the habitat is a primary concern; “Small patches of forest show lower biodiversity, increased vulnerability to invasion by exotic plant and animal species and decreased gene flow within and among populations. The secondary and indirect impacts of development further contribute to habitat loss and fragmentation.” The conclusion is drawn that “the Florida Keys has surpassed the capacity of the upland habitats to withstand further development. Any further development would exacerbate secondary and indirect impacts.

The Carrying Capacity Study concludes with four guidelines for future development:

- 1) Prevent encroachment into native habitat.
- 2) Continue and intensify existing land acquisition programs and land restoration efforts throughout the Keys, wastewater and storm water master plan implementation, and on-going research and management activities.
- 3) Focus on redevelopment and infill development, small potentially acceptable, additional environmental impacts may occur in areas ripe for development and redevelopment.
- 4) Increase efforts to manage the resource to preserve and improve the remaining terrestrial ecosystems.

2.3 Goal 105 Smart Growth

Goal 105 was adopted by the Board of County Commissioners in 2001 to provide a framework within the 2010 Comprehensive Plan to implement the FKCCS and a 20 year land acquisition Program. Goal 105 reads as follows:

Monroe County shall undertake a comprehensive land acquisition program and smart growth initiatives in conjunction with its Livable CommuniKeys Program in a manner that recognizes the finite capacity for new development in the Florida Keys by providing economic and housing opportunities for residents without compromising the biodiversity of the natural environment and the continued ability of the natural and made-made systems to sustain livable communities in the Florida Keys for future generations.

The initial phase of implementing Goal 105 is the drafting and adoption of the Tier maps to be used as guidance for the County’s land acquisition program. Future work tasks include amending the zoning map with a tier overlay, revising the permit allocation system, developing a land acquisition strategy and a land maintenance program.



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The County is directed to implement the 20 year land acquisition program by designating acquisition areas into three general categories: Natural Area (Tier I); Transition (Tier II); and Infill Area (Tier III). Tier III lands will only be acquired for affordable housing and parks. The acquisition program is to be funded with assistance of the state and federal governments and shall accomplish the following:

- secure for conservation and passive recreation purposes remaining privately-owned environmentally sensitive lands;
- retire development rights on privately owned vacant lands to limit further sprawl and to balance the rights of property owners with the sustainability of the Keys man-made and natural systems;
- secure and retain land for affordable housing. (Objective 105.2)

The goal includes a description of the lands to be included in each Tier. The descriptions are outlined below:

Tier I – Natural Area

Conservation, restoration and protection of environmentally sensitive land

- Adjacent to existing publicly owned lands and/or high quality habitat.
- Conservation land to qualify for ROGO dedication.
- Consisting of private vacant parcels to be acquired or development rights retired for resource conservation, restoration or passive recreation.
- New development severely restricted in the allocation system.

Tier II – Transition and Sprawl Area

Prevent encroachment on environmentally sensitive land and reduce sprawl.

- Consists of less than 50% built subdivisions or parts of subdivisions with incomplete infrastructure and less than 4 acre of isolated environmentally sensitive land.
- County purchase w/adjacent lot owners – retire development rights and development potential.
- New development discouraged in allocation system.

Tier III – Infill Area

Redevelopment and infill new development.

- Consists of >50% built subdivisions with full infrastructure present or in future plans with established commercial areas.
- Development encouraged in allocation system.
- Newly established community centers become eligible Transfer of Development Rights (TDR) receiver sites with a higher density incentive to TDR.



3.0 Tier Maps

The Tier Maps are based on the requirements and scientific findings from the previously described documents. The maps are being proposed, at this time, as a guide for future land acquisition from willing sellers and designation of Tier I to allow lots to be dedicated for ROGO points. Tier maps have been drafted and are under consideration for all lands in unincorporated Monroe County south of Ocean Reef. The tiers are large areas, with characteristics shared by the majority of the land areas. All tiers include some existing residential and commercial uses, being designated Tier I or Tier II should not have any effect on those existing uses. The tier maps were created using the county's Arc View GIS, which contains most of the maps, aeriels, data, and overlays used in performing the FKCCS.

3.1 Criteria

The criteria used to designate the tiers and draw the boundaries between different tiers were developed using the Carrying Capacity Study, Goal 105 and other goals and policies within the 2010 Comprehensive plan

Criteria followed to designate lands as Tier I:

- Include natural areas of more than 4 acres and buffer areas of privately owned vacant lots and parcels.
- Include land to connect patches and reduce further fragmentation.
- Provide a buffer between natural areas and development to minimize secondary impacts up to a 500-foot radius. Canals or roadways may, depending on size, form a sufficient barrier from secondary impacts.
- Include areas on county threatened and endangered species maps.
- Include most NA districts; other districts in buffer/restoration area.
- Consider potential for successful land management - restoration of disturbed habitat, removal of exotics, and connecting patches.
- Has minimal existing development.
- Is legally and scientifically defensible.

Criteria followed to designate lands as Tier II:

- Includes subdivision less than 50% developed, or a portion of a subdivision that is less than 50% developed because of environmental constraints.
- Contains fragmented, unconnected hammock patches of 4 acres or less and is isolated from larger natural areas by existing development.
- Includes large developed and undeveloped SR and SS lots with habitat.
- Has platted lots in areas where adjoining property owner(s) may purchase the lots with county financial participation - a conservation easement and possibly limited accessory uses.



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Criteria followed to designate lands as Tier III:

- Consists of substantially developed subdivisions near established commercial areas.
- Has small IS and URM lots.
- May contain small fragmented hammock areas.

3.2 Methodology

Goal 105 states that overlay maps of the proposed tiers are to be created per Policy 105.2.2 which shall be incorporated as an overlay on the zoning maps with supporting text amendments in the Land Development Regulations and the smart growth initiatives in conjunction with the Livable CommuniKeys Program.

For the first phase of this mapping project, staff was directed to create a specific database tied to the GIS to be used to expand the area available for land acquisition from willing sellers for the Land Acquisition Program. These maps will continue to be refined and adopted as zoning overlays to implement the smart growth initiatives and Livable CommuniKeys Program. The maps attribute table provides the following information:

- Property owner
- Property Record card number
- Existing land use designation
- Future land use designation
- Value of property
- Existing Property Appraiser's Code of Actual Use on Property
- Environmental Designation (wetland, hammock, etc.)
- Size of property
- Subdivision identification
- Island name
- Tier Designation

Using the database, GIS shapefiles were created. The shapefiles were used for the creations of Tier maps. While the attribute table provides the information in tabular format regarding the property, the map gives the spatial details; this visual affect allows for fine-tuning of the tier system. The creation of the base map allows for analysis using various computerized overlays, which may be used to aid the planning department or land authority in regard to acquisition, assessment or monitoring. The aide of the maps allowed field inspections and/or prior knowledge to correct any discrepancies in the databases.

The first priority for land acquisition is to identify areas as Tier I, or natural areas. In order to begin mapping, the attribute table was used to determine the location of the existing natural areas. Locating where the existing sensitive lands lie within the acquisition boundaries of federal and state resource conservation areas and parks were the first step.



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Next the existing ADID (Advanced Identification of Wetlands) dataset was used and sensitive lands were highlighted in the legend and an overlay was created from this information. Once the foundation layer showed where the sensitive areas were, the second layer on the map was CARL lands, or lands within the acquisition boundaries of federal and state resource conservation and park areas. A Tier column was added to the data set and all of these areas received a "Tier I Designation." In addition, small, isolated platted subdivisions with clusters of more than four acres of sensitive habitat located within 500 feet of privately-owned vacant lands, received the Tier I designation in the data set and a Tier I layer was formed. All non-developed state and federal public parcels and local parks above four acres received a Tier I designation.

A GIS layer depicting existing infill and subdivision build-out was the primary basis for Tier III designations. In an effort to determine property to be designated as Tier III, the first attempt was to sort all subdivisions and determine by count how many were 50 percent or more developed. Once determined, the sensitive lands layer was placed over the 50 percent developed subdivisions layer to see if any of these subdivisions might have pockets of sensitive lands. If clusters of hammock existed within the subdivision, either the subdivision was divided into Tier III and Tier II or, the subdivision was determined a Tier II designation because of the amount of hammock.

For acquisition purposes, if the subdivision is over 50% built out but cannot be further developed due to environmental constraints; remaining lots will be designated for acquisition. It should be noted that parcels that house condominiums with large native open space areas were generally given a Tier I designation even though the units themselves were given a Tier III designation. Most condominium units require ample open space thus the existing vacant land cannot be built on and these open spaces generally contain clusters of environmentally sensitive lands. However, if the open space was not environmentally sensitive, the parcel received a Tier II designation. This scenario also describes that of mobile home parks where the parcel of land is owned by one entity.

The third phase of creating the Tier Maps was the Transition and Sprawl Reduction Area (Tier II). The first measure in the designation was the subdivision build out with infrastructure, proximity to established commercial areas and pockets of environmentally sensitive lands. These were determined by process of elimination. Once the 50 percent build out was given and mapped, the sensitive environment layer was placed over the Tier II designated areas to see if the subdivision had large pockets of environmentally sensitive lands. Then the determination was made as to whether the subdivision was near established commercial areas. If the subdivision was built out but had clusters or pockets of sensitive lands; the designation might be broken into two tiers. Acreage that was not platted generally received a Tier II designation as did large parcels of private vacant land. Most of the Suburban Residential (SR) land use district was given a Tier II designation as only one dwelling unit is permitted per two acres.